

Environmental Quality
GUIDANCE FOR EVALUATING PERFORMANCE-BASED CHEMICAL DATA

Table of Contents

Subject	Paragraph	Page
Chapter 1. Introduction		
Opening Remarks	1-1	1-1
Scope and Limitations of Performance-Based Data Review	1-2	1-1
Performance-Based Data Review Versus Data Validation	1-2.1	1-3
Performance-Based Data Review Versus Usability Assessment	1-2.2	1-4
Overview of Performance-Based Data Review	1-3	1-5
Chapter 2. Data Review Reports		
Introduction	2-1	2-1
Cover Page	2-2	2-1
Cover Letter	2-3	2-1
Executive Summary	2-4	2-2
Technical Summary	2-5	2-2
Data Summary Tables	2-6	2-4
Project Specific Communications	2-7	2-4
Project Specific Communications	2-8	2-5
Chapter 3. Data Qualifiers		
Introduction	3-1	3-1
Definitions of Data Qualifiers	3-2	3-2
Chapter 4. Completeness		
Introduction	4-1	4-1
Minimum Reporting Requirements	4-2	4-1
Cover Letter	4-2.1	4-1
Case Narrative	4-2.2	4-2
Technical Summary	4-2.3	4-2
Sample Management Records	4-2.4	4-4
Batch QC Summary Results	4-2.5	4-4
Standard Preparation Logs	4-2.6	4-4
Sample Preparation Logs	4-2.7	4-5
Instrument Run-Sequence Logs	4-2.8	4-5
Traceability	4-2.9	4-6
Calibration Summary Results	4-2.10	4-6
Chromatographic Methods for Organic Target Analytes	4-2.11	4-7
Initial Calibration	4-2.11.1	4-7
Internal Standard Summary Information	4-2.11.2	4-7
Surrogate Results	4-2.11.3	4-8

Subject	Paragraph	Page
Chromatographic Methods With 2-D Detectors.....	4-2.11.4	4-8
Evaluation of Completeness	4-3	4-8
Missing Blanks	4-3.1	4-9
Missing Laboratory Control Samples.....	4-3.2	4-10
Matrix Spike Data	4-3.2.1	4-10
Surrogate Spike Data.....	4-3.2.2	4-11
CCV Data	4-3.2.3	4-11
Missing Detection Limits	4-3.3	4-11

Chapter 5. Holding Times and Preservation

Introduction	5-1	5-1
Acceptance Criteria	5-2	5-1
Evaluation.....	5-3	5-1
Qualification	5-4	5-3
Low Stability Target Analytes.....	5-4.1	5-3
High Stability Target Analytes.....	5-4.2	5-3

Chapter 6. Data Review Reports

Introduction	6-1	6-1
Method Reporting Limits	6-2	6-1
Establishing Method Reporting Limits	6-2.1	6-1
Qualification	6-2.2	6-2
Method Quantitation Limits	6-3	6-3
Establishing Method Quantitation Limits	6-3.1	6-3
Qualification	6-3.2	6-5

Chapter 7. Initial Calibration

Introduction	7-1	7-1
Acceptance Criteria	7-2	7-1
Frequency	7-2.1	7-1
Number of Calibration Standards.....	7-2.2	7-1
Linear Calibration.....	7-2.3	7-2
Organic Methods	7-2.3.1	7-2
Inorganic Methods.....	7-2.3.2	7-3
Nonlinear Calibration	7-2.4	7-3
Intercept of Calibration Curve.....	7-2.5	7-3
Evaluation.....	7-3	7-4
“Goodness of Fit”	7-3.1	7-4
Representativeness of Initial Calibration Curve.....	7-3.2	7-4
Qualification	7-4	7-5
Frequency and Number of Standards	7-4.1	7-5
Representativeness	7-4.2	7-5
“Goodness of Fit”	7-4.3	7-5
Calibration Range.....	7-4.4	7-7

Chapter 8. Initial Calibration Verification (ICV)

Introduction	8-1	8-1
Criteria.....	8-2	8-1
Evaluation.....	8-3	8-1

Subject	Paragraph	Page
Qualification	8-4	8-2
Frequency	8-4.1	8-2
Percent Recovery	8-4.2	8-2
Inorganics	8-4.2.1	8-2
Organics.....	8-4.2.2	8-2
Qualification for Bias	8-4.3	8-2

Chapter 9. Continuing Calibration Verification (CCV)

Introduction	9-1	9-1
Criteria.....	9-2	9-1
Traceability and Reporting Requirements.....	9-2.1	9-1
Representativeness	9-2.2	9-1
Frequency	9-2.3	9-1
Chromatographic Methods	9-2.3.1	9-2
Inorganic Methods.....	9-2.3.2	9-2
Acceptance Criteria	9-2.4	9-2
Inorganic Methods.....	9-2.4.1	9-2
Organic Chromatographic Methods	9-2.4.2	9-3
Evaluation.....	9-3	9-3
Qualification	9-4	9-4
Representativeness	9-4.1	9-4
Frequency	9-4.2	9-5
Tolerance for Uncertainty.....	9-4.3	9-5
Inorganic Methods, CCVs Not Processed with Samples	9-4.3.1	9-6
Inorganic Methods, CCVs Processed with Samples	9-4.3.2	9-6
Organic Methods, CCVs Not Processed with Samples	9-4.3.3	9-6
Organic Methods, CCVs Processed with Samples	9-4.3.4	9-6
General Qualification Strategies.....	9-4.4	9-6

Chapter 10. Blanks

Introduction	10-1	10-1
Criteria.....	10-2	10-1
Frequency	10-2.1	10-1
Acceptance Limits	10-2.2	10-1
Evaluation.....	10-3	10-2
Contractual Considerations	10-4	10-2
Qualification for Blank Contamination	10-5	10-3

Chapter 11. Laboratory Control Samples (LCSs)

Introduction	11-1	11-1
Criteria.....	11-2	11-1
Frequency	11-2.1	11-1
Acceptance Limits	11-2.2	11-1
Evaluation.....	11-3	11-2
Contractual Considerations	11-4	11-3
Qualification	11-5	11-4
Qualification Strategies Using Estimates of the Uncertainty	11-6	11-6

Subject	Paragraph	Page
Chapter 12. Matrix Spikes, Matrix Spike Duplicates, and Matrix Duplicates		
Introduction	12-1	12-1
Interpretation of Matrix Spike and Duplicate Results	12-2	12-1
Estimating Statistical Matrix Spike Recovery Ranges	12-3	12-3
Criteria.....	12-4	12-4
Representativeness	12-4.1	12-4
Frequency	12-4.2	12-5
Acceptance Limits	12-4.3	12-5
Project Specific Communications	12-4.3.1	12-5
Establishing Acceptance Limits for Matrix-Dependent Duplicates	12-4.3.2	12-7
Evaluation.....	12-5	12-7
Contractual Considerations	12-6	12-7
Qualification.....	12-7	12-8
Matrix Spikes and Matrix Spike Duplicates.....	12-7.1	12-8
Matrix-Dependent Duplicates	12-7.2	12-10
Chapter 13. Surrogates		
Introduction	13-1	13-1
Criteria.....	13-2	13-1
Evaluation.....	13-3	13-2
Contractual Considerations	13-4	13-3
Qualification.....	13-5	13-4
Chapter 14. Data Review Reports		
Introduction	14-1	14-1
Criteria.....	14-2	14-1
Frequency	14.2.1	14-1
Acceptance Limits	14.2.2	14-1
Evaluation.....	14-3	14-2
Qualification.....	14-4	14-2
MS Recovery Acceptable and PDS Recovery Unacceptable	14-4.1	14-2
MS Recovery Unacceptable and PDS Recovery Acceptable	14-4.2	14-3
MS Recovery Unacceptable and PDS Recovery Unacceptable	14-4.3	14-3
Chapter 15. Data Review Reports		
Introduction	15-1	15-1
Criteria.....	15-2	15-1
Frequency	15-2.1	15-1
Duplicate Precision.....	15-2.2	15-1
Evaluation.....	15-3	15-2
Qualification.....	15-4	15-2
Chapter 16. Internal Standards for Organic Chromatographic Methods		
Introduction	16-1	16-1
Criteria.....	16-2	16-1
Frequency	16-2.1	16-1
Acceptance Criteria	16-2.2	16-1
Evaluation.....	16-3	16-2
Qualification.....	16-4	16-2

Subject	Paragraph	Page
Appendix A		
Glossary		A-1
Appendix B		
Holding Times and Preservation		B-1